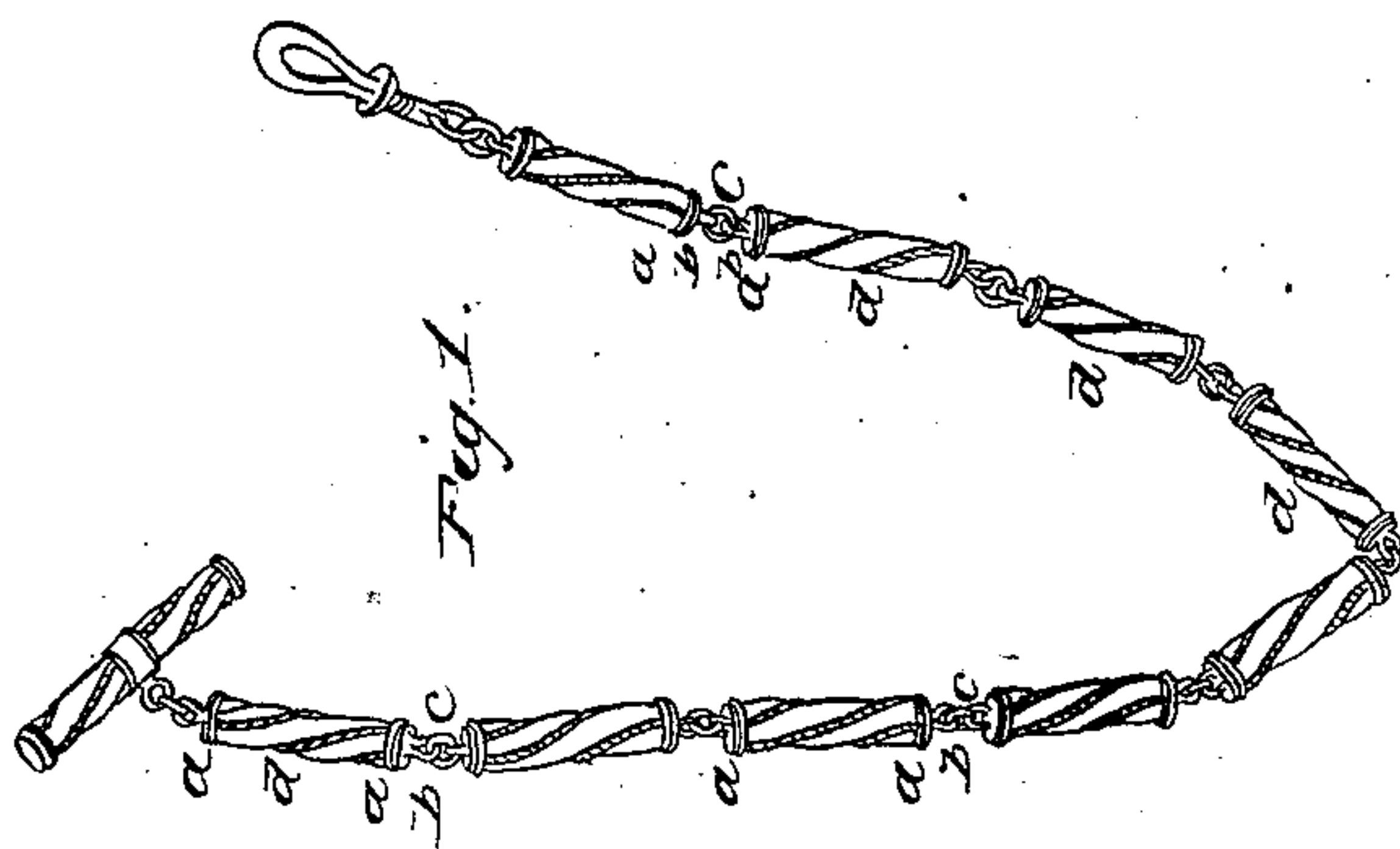
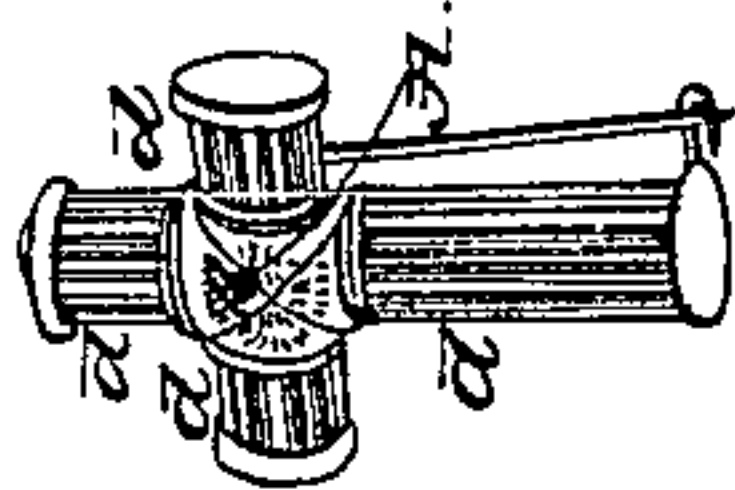


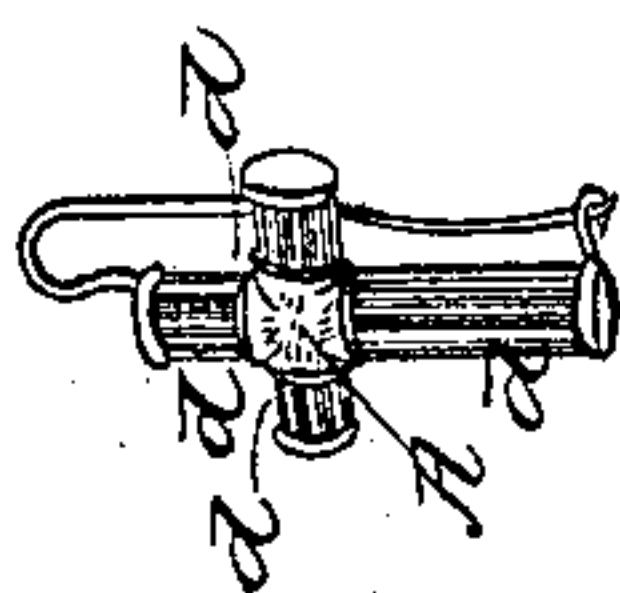
*E. S. Richards*  
*Ornamental Chain,*  
*N<sup>o</sup> 38,842.* *Patented June 9, 1863*



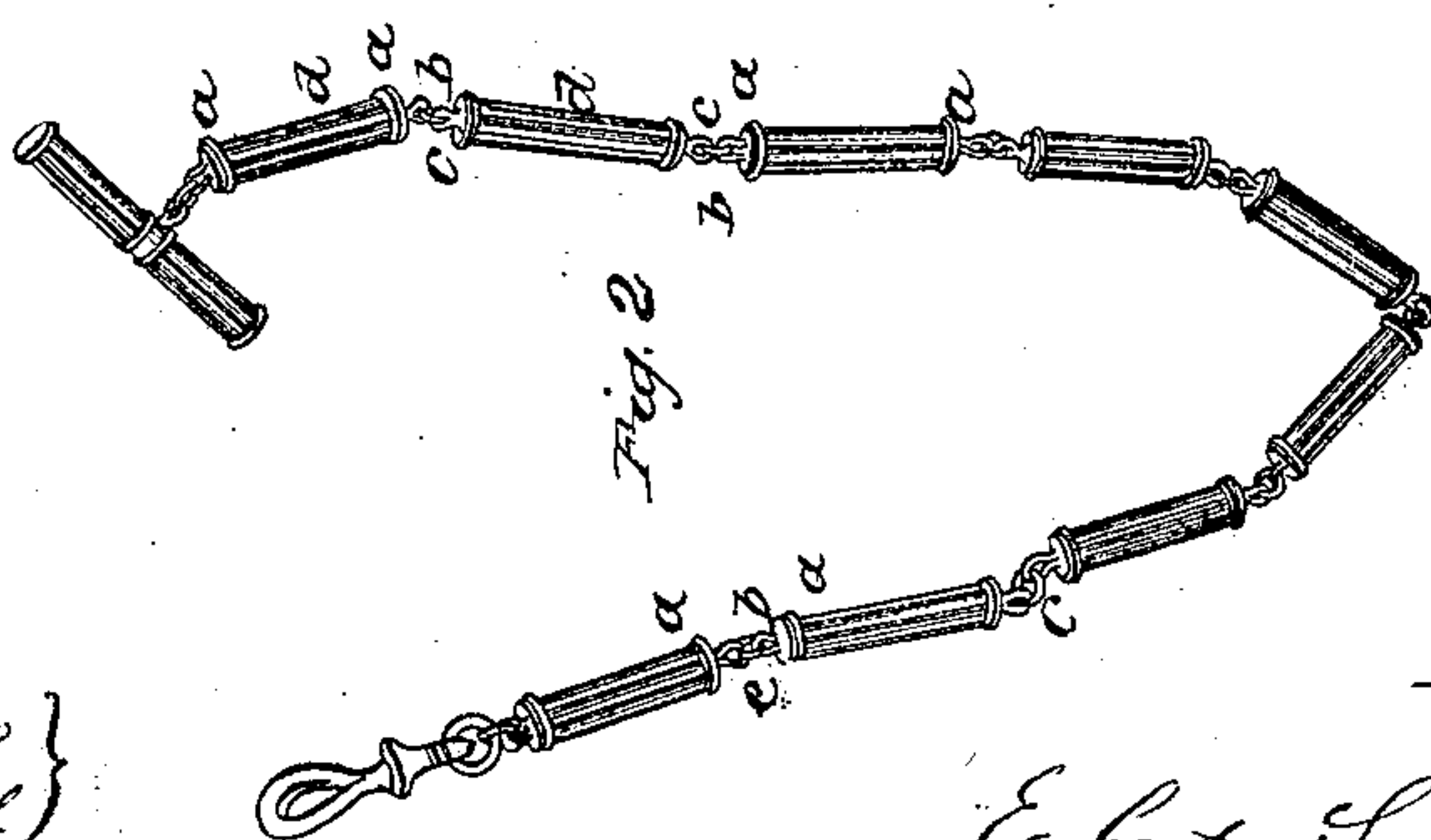
*Fig. 4*



*Fig. 5*



*Fig. 3*



*Witnesses*  
*John D. Murison*  
*Thos. H. Peabody*

*Inventor.*

*Egbert S. Richards*

# UNITED STATES PATENT OFFICE.

EGBERT S. RICHARDS, OF ATTLEBOROUGH, MASSACHUSETTS.

## IMPROVEMENT IN ORNAMENTAL CHAINS, &c.

Specification forming part of Letters Patent No. 38,812, dated June 9, 1863.

*To all whom it may concern:*

Be it known that I, EGBERT S. RICHARDS, of Attleborough, in the Commonwealth of Massachusetts, have invented a new and useful improvement in making ornamental chains, breast pins, ear-drops, and similar articles of ornament; and I do hereby declare that the following specification, taken in connection with the drawings, making a part of the same, is a full, clear, and exact description thereof.

Figures 1 and 2 are views of different styles of chains. Fig. 3 is a cross-section of one of the links. Fig. 4 is a view of a breast-pin, and Fig. 5 of an ear-drop.

Ornamental chains have been made composed of links of glass tubing, the ends of each link being furnished with a metallic tip and eye as a means for attaching the links to each other. These chains have heretofore been made with no other means of securing the tips to the link than by a wire extending through the hollow axis of the glass link and soldered to each tip. Links of this description, having no external protection, are liable to be easily broken from the brittle character of the material of which they are composed, and chains of this description possess in consequence a much less merchantable value than they otherwise would have.

The object of my improvement is to remedy to a considerable extent this objection and at the same time add greatly to the beauty of the article; and in so doing, I have employed a principle which is applicable, not only to the class of ornamental chains spoken of, but also to many forms of breast-pins, ear-drops, and other ornamental articles.

For the purposes of a guard-chain, I make each link of glass tubing, the surface of which is fluted, with channels running parallel with the line through the central axis, as shown in Fig. 2, or spirally around the axis, as shown in Fig. 1. These channels are for the purpose of receiving the metallic rods hereinafter mentioned, and thereby avoiding increasing the apparent diameter of the link, as well as for the purpose of giving the effect of inlaid work to the article; but it is not necessary that the links should be so fluted to constitute my in-

vention, as plain cylindrical links can be used with the same advantages of construction, though in my opinion the article when so made is inferior in point of artistic effect.

*a a* represent the tips of each link, which are each furnished with the eye *b* for the connecting-ring *c*, by which it is attached to the next link. The tips of each link are connected together by the wire rods *d d d*, soldered at their ends to the tips, so that the tips and rods constitute a frame-work within which the glass link is held. If fluted links are used, the rods should be placed in the channels and should correspond in number to the number of channels.

It is obvious that by this method of construction a great advantage in strength is obtained, inasmuch as the number of points of attachment are increased with the number of rods used, while a rod running through the hollow axis can be also employed, if desired. The chief advantage of construction, however, which is the result of my improvement, is that the rods and caps form a skeleton frame for the glass, so that if the link should become fractured it will still be sustained by the frame-work and the injury be hardly perceptible, while without the improvement the broken parts, having no external support except the tips, which are attached only by cement to the glass, would soon become detached and play loosely against the central wire.

The same method of construction, it is obvious, can also be applied to many other articles of ornament with the same advantages of strength and of pleasing effect above described.

Figs. 4 and 5 represent a cruciform pattern of breast-pin and ear-drop. The tips which cover the ends are attached to the central socket, *A*, by means of the rods *d d d*, in the same manner as previously described, and form a skeleton metallic cross, within which the glass or other material is held and by which it is sustained.

Although my improvement is especially adapted to the use of glass or other similar brittle material, it can also with advantage be employed where other substances—as, for in-



stance, wood, vulcanized rubber, or other materials which do not admit of being united to metal by solder—are used.

What I claim as my invention, and desire to secure by Letters Patent, is—

The improved method of making links for guard-chains, breast-pins, ear-drops, or other similar articles of ornament described, consisting of the use of a skeleton frame of metal,

within which the glass or other material composing the body of the ornament is contained, and by which it is held in place, substantially as specified.

EGBERT S. RICHARDS.

Witnesses:

BENJ. F. THURSTON,  
JOHN D. THURSTON.